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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/617,233

07/11/2003

Toshiaki Hirano

46969-5395 (212579)

2330

55694 7590 12/19/2008
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EXAMINER

LIN, JAMES

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

12/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/617,233	Applicant(s) HIRANO ET AL.	
	Examiner Jimmy Lin	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 30 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita et al. (WO 02/19368; references made are to the English equivalent U.S. Publication No. 2004/0075388) in view of Smith (WO 01/31081).

Miyashita discloses a method of making a PDP (abstract), wherein a MgO protection film 16 having (111) alignment is formed on the PDP substrate [0064].

Miyashita teaches that the film can be formed via a vacuum deposition method [0080], but does not explicitly teach (a) feeding the substrate along a passage and (b) heating and evaporating a plurality of evaporation sources to form the protection film such that at least one of the evaporation sources is located outside of the display area of the PDP. However, Smith teaches a method of forming a film via vacuum deposition (abstract). A plurality of point sources 46 can be arranged in a linear array (pg. 12, lines 23-29). At least one of the evaporation sources is located beyond the edge of the substrate 54 (Fig. 9). The substrate is moved at a constant velocity v in a first direction during deposition (pg. 15, lines 6-9). The linear design of the evaporation source helps to form a uniform film all the way to the very edges of the substrate (paragraph bridging pg. 16-17). Accordingly, Miyashita teaches the need to form an MgO film having uniform thickness [0142]. Taking the references as a whole, it would have been obvious to one of ordinary skill in the art at the time of invention to have fed a PDP substrate along a passage such that at least one of the evaporation sources is positioned out of the display area of Miyashita with a reasonable expectation of success. One would have been motivated to do so in order to have formed the protection film with greater uniformity.

Smith does not explicitly teach a first line and a second line forming an angle between 60° and 80° , wherein the first line and the second line are respectively defined as a line

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connecting at least one of the evaporation sources located outside of the display area to a point on the display area closest to the evaporation source, and a line extending from the evaporation source in a direction parallel to a width of the substrate. However, one of ordinary skill in the art would have expected any angle formed by the first and second line to have achieved the advantage of forming a uniform layer, so long as a deposition source is placed beyond the deposition area and the throw distance is less than 12 in., as suggested by Smith (pg. 17, lines 23-27). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to have placed a deposition source beyond the deposition area such that the first and second line form any angle in the method of Miyashita and Smith, including an angle of the claimed range, with a reasonable expectation of success and with the expectation of similar results.

Miyashita and Smith do not explicitly teach that the angle is measured based on the maximum display area capable of being fed. However, one of ordinary skill would have recognized that various display sizes were in demand and that different display sizes, including the largest size capable of being fed through the passage, could have been fed through the vacuum deposition apparatus. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to have fed the largest display size capable of being fed through the passage with a reasonable expectation of success. One would have been motivated to do so in order to have fully utilized the vacuum deposition apparatus.

Response to Arguments

3. Applicant's arguments filed 10/16/2008 have been fully considered but they are not persuasive.

Rejections under 35 U.S.C. 103(a):

Applicant notes on pg. 9-10 that Smith has been relied upon to achieve an improved uniformity of the film, and argues that the characteristics of the film are not discussed at all in present description and claims. However, there is no requirement for the motivation of a *prima facie* case of obviousness to be the same as that of the present invention.

Applicant argues on pg. 10 that a substrate having a display area of a size near to a limit of the fabricating apparatus is becoming used as the size of the PDP becomes large and that the

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evaporation source cannot be positioned with sufficient allowance as in the case of prior art arrangements. However, Smith teaches that the positioning of evaporation sources beyond the edges of the substrate was known in the vapor deposition art. Such placement of the evaporation sources guarantees film uniformity out to the very edges of the substrates as the substrates are passed through vaporous deposition materials plumes (paragraph bridging pg. 16-17 of Smith).

Applicant argues on pg. 10-11 that the relative intensity of the orientation of (111) of the crystals of the protection film is increased by setting the angle between the first and second lines according to the embodiments of the present invention at an angle between 60-80 degrees, for a maximum display area among display areas of substrates to be inserted into the film forming apparatus. However, present claim 30 does not even require the protection film to have an orientation of (111) and encompasses the protection film having any orientation. Miyashita, for example, teaches that the MgO protective layer can have either (100) or (111) plane orientation [0019].

Applicant argues on pg. 11 that a person skilled in the art would not realize that the angle between the first and second lines is set at an angle in a range of 60-80 degrees for a largest display area among display areas of the substrates to be inserted into the film forming apparatus. However, one of ordinary skill would have recognized that various display sizes were in demand and that different display sizes, including the largest size capable of being fed through the passage, could have been fed through the vacuum deposition apparatus in order to have fully utilized the vacuum deposition apparatus. Additionally, one of ordinary skill in the art would have expected any angle formed by the first and second line to have achieved the advantage of forming a uniform layer, so long as a deposition source is placed beyond the deposition area and the throw distance is less than 12 in., as suggested by Smith (pg. 17, lines 23-27).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aoki et al. (U.S. Patent No. 5,770,921) teaches the vapor deposition of MgO.

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5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is (571)272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jimmy Lin/
Examiner, Art Unit 1792

/Timothy H Meeks/

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Supervisory Patent Examiner, Art Unit
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